

WHAT IS CLAIMED IS:

1. Sample loading device for loading and injecting a sample of a specimen, comprising:
 - 5 - an injector adapted for injecting a specimen from a specimen reservoir into an injection channel;
 - the injection channel having a sample injection spot for injecting a sample of the specimen into a separation device adapted for separating the sample; and
 - 10 - a control unit adapted for detecting a time dependant electrical parameter of the fluid along the injection channel and for controlling the separation device in response thereto.
2. Sample loading device of claim 1, wherein the parameter is at least one of a resistance of the fluid, a potential difference, and a current flow along the injection channel.
- 15 3. Sample loading device of claim 1, comprising at least one selected from the group consisting of:
 - the specimen reservoir is arranged between a first part and a second part of the injection channel, the second part comprising the sample extraction point;
 - 20 the specimen reservoir comprises an inlet receiving the specimen comprising fluid, the inlet arranged near the connection to the second part of the injection channel; and
 - the distance of the reservoir and the sample extraction point is about 200 μm .
- 25 4. Sample loading device of claim 1, comprising at least one selected

from the group consisting of:

the injector is adapted for generating an electrical field along the injection channel;

5 the injector comprises a first electrode arranged near a first end of the injection channel and a second electrode arranged near a second end of the injection channel, wherein the sample injection spot is arranged between the first and second electrode; and

10 a first electrode arranged at a first end of the injection channel and a second electrode arranged at a second end of the injection channel, the first and second electrodes being adapted for providing an electrical field along the injection channel.

5. Sample loading device of claim 1, comprising a first electrode and a second electrode arranged in the separation channel, wherein the sample injection spot is arranged in between the first and second electrode.
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6. Sample loading device of claim 1, comprising at least one selected from the group consisting of:

the injection channel is incorporated within a glass or plastic body; and

20 the fluid in at least the separation channel comprises PDMA or acrylamid or another polymer.

7. Device for separating a sample of a specimen, comprising:

a sample loading device, according to claim 1, for loading and injecting the sample of the specimen, and

25 a separation device adapted for receiving the sample from the sample

loading device and for separating the sample.

8. Method for loading and injecting a sample of a specimen,
comprising:
 - 5 - injecting a specimen from a specimen reservoir into an injection channel, wherein the injection channel has a sample injection spot for injecting a sample of the specimen into a separation device adapted for separating the sample;
 - detecting a time dependant electrical parameter of the fluid along the injection channel; and
 - 10 - controlling the separation device in response to the detected parameter.
9. Method of claim 8, wherein detecting the parameter comprises determining a peak value of the physical parameter measured.
10. Method of claim 8, further comprising separating the received
15 sample.